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Knowledge management in strategic alliances

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KNOWLEDGE MANAGEMENT IN STRATEGIC ALLIANCES

Summary

Knowledge is one of the key resources in business development. Framework for the analysis of the knowledge management system may be built around the concepts of: properties of units, properties of relationships between units, and properties of knowledge. Effective knowledge management results from providing individuals with the opportunity to create, retain, and transfer knowledge. Interfirm learning in strategic alliances offers the potential to build competitive advantage. The two essential practices are: knowledge acquisition and knowledge creation.

Intellectual capital and the knowledge are at the center of biotechnology firms. To exploit these resources it is necessary to be involved in various types of networks to diffuse and assimilate knowledge.

Keywords: knowledge, management, absorptive capacity, strategic alliances.

Introduction

The information and knowledge have become the critical components of success in the highly competitive environment. The long history and growing interest in the issues of learning in organizations (e.g. Smith, 1937; Weber, 1922; Cyert and March, 1963) have led to the development of formal theory of organizational learning and knowledge management. The long lasting research in this field resulted in a wide array of theoretical perspectives, which span different disciplines, including economics, information systems, organizational behavior, psychology and sociology.

As confirmed by recent research (e.g. de Zubielqui, Jones and Statsenko, 2016) enterprise's critical resources may extend beyond the traditional boundaries, with the focal enterprise drawing upon the resources of other firms and institutions. Such a perspective is reflected in the works of scholars who describe the new

knowledge-based economy as more collective or communal in nature (Felin, Zenger and Tomsik, 2009). They focus on the importance of non-market mechanism in knowledge creation and appropriation. They suggest that knowledge economy require new governance mechanisms, such as networks and communities of firms and larger groups, of individuals (Adler, 2001; Benkler, 2006). Forms of collective governance, including networks of both loosely and tightly linked relationships are required to accumulate and create knowledge. Some authors go even further, saying that “as production is reconfigured to allow planful control over ever-larger aggregates, the role of the market as a coordinating mechanism is progressively subordinated” (Adler and Heckscher, 2006, p. 77–78). They argue that market-based mechanisms stifle cooperation and trust in organizations, which are necessary for knowledge creation (Nahapiet et al. 2005).

1. Managing knowledge in organizations

The framework for the analysis of organizational learning may be built using two critical dimensions (Argote, McEvily and Reagans, 2003): knowledge management outcomes (knowledge creation, retention and transfer) and properties of the knowledge management context (properties of units, properties of relationships between units, and properties of knowledge).

1.1. Knowledge management context

Different theories of knowledge management highlight different aspects of the context within knowledge is created.

Properties of Units

Many explanations of effective knowledge management focus on properties of a particular unit (an individual, an organization or a network of organizations). The key driver of effective knowledge management is some characteristic of the unit itself. According to psychologists and sociologists *status* appears to be an important property of units in the process of knowledge creation, retention and transfer.

Properties of Relationships between Units

Another school of thinking gives priority to how units are connected to each other. This school is characterized by two approaches. One approach focuses on the dyadic relationship between social units. That relationship can vary along a key set of dimensions, including intensity of connection, communication or contact frequency. A second approach emphasizes the pattern of connections between multiple units. For instance, knowledge is more likely to transfer between establishments that are owned by the same parent organization than across independent organizations

(Baum and Ingram, 1998). The same, or similar, language “spoken” by the units is also conducive to knowledge transfer.

Properties of Knowledge

Knowledge properties affect the rate at which knowledge is accumulated, how much of it is retained, and how easily it diffuses within and across firm boundaries. For instance, tacit knowledge, or knowledge that is difficult to articulate, is best transferred through observation rather than through more explicit media (Nadler et al. 2003). Similarly, knowledge that has not been codified is more difficult to transfer than codified knowledge. One other dimension is whether knowledge is perceived as external or internal to the focal unit. It appears that organizational members are more likely to value knowledge from external, rather than internal, sources (Menon and Pfeffer, 2003).

1.2. Knowledge management mechanisms

Successful knowledge management depends on ability, motivation, and opportunity (Argote et al., 2003). For example, members of a unit are unlikely to transfer knowledge from other parts of the organization if they are not rewarded for utilizing internal knowledge (Menon and Pfeffer, 2003). Social rewards can be just as important as monetary rewards. Strong social ties promote the transfer of tacit knowledge, because strong ties are more likely to be governed by the norms of reciprocity.

Effective knowledge management results from providing individuals with the opportunity to create, retain, and transfer knowledge. Organizations reduce the amount of distance between people. By reducing that distance, organizations provide members with the opportunity to learn from each other. Proximity also provides people with the opportunity to learn who knows what, so and to know where to search for relevant knowledge and information.

Apart from dyadic research on knowledge management (i.e. the focus on the properties of a single relationship between two individuals or units), other research concentrates on the properties of a set of relationships in a social system. Over the past few decades the concept of networks of relationships has grown in prominence. Properties of an organization’s internal social network as well as its network to other firms (Uzzi and Lancaster 2003) affect learning and knowledge transfer.

2. Managing knowledge in strategic alliances

Interfirm learning in strategic alliances offers the potential to build competitive advantage (Lane, Koka and Pathak, 2006). Successful learning from alliance partners and application of alliance knowledge to innovation both involve a set of

knowledge management practices. The two essential practices are: knowledge acquisition and knowledge creation.

Alliance learning falls into two categories: learning within and learning from alliances (Inkpen, 2000). The former examines how collective learning affects alliance-based performance, the latter refers to how individual firms internalize knowledge from alliance partners to facilitate their own performance. In an alliance learning process the two interfirm learning processes are critical: knowledge acquisition and creation.

As regards the knowledge acquisition, the concept of 'absorptive capacity' is worth mentioning (Cohen and Levinthal, 1990). Absorption refers to internalization of external knowledge (exploitation) to improve a firm's innovative performance. Firms with superior absorptive capacity are well positioned to increase their knowledge base through a strategic alliance (Lee, Johnson, and Grewal 2008). *Potential* absorptive capacity depicts efforts spent on identifying and acquiring knowledge from external sources, and *realized* absorptive capacity captures transformation of existing knowledge into new concepts and their use in the innovation process. Realized absorptive capacity is necessary factor in converting external knowledge to innovative outputs.

3. Knowledge management processes in biotechnology alliances

Biotechnology is a rapidly expanding field of science that applies science and technology to change living organisms or material to produce knowledge, goods and services. The biotechnology industry covers core biotechnology activities as well as the goods and services required to supply and maintain the sector. Taken together these activities represent the bioeconomy, which will increase in significance in relation to the broader economy. Currently, over one-third of the world's GDP is generated by biotechnology and related industries.

Biotechnology firms need to develop and manage expertise and knowledge in the selection of strategic partners and in the management of those relationships. Knowledge management has become a critical imperative in interorganizational interactions (Malhotra et al., 2005). The creation and transfer of knowledge within and between firms is influenced by the interaction of the following factors (Malhotra et al., 2005):

- Knowledge factors:
 - absorptive capacity – organizational capability to create and utilize knowledge. It is composed of four stages: acquisition, assimilation, transformation and exploitation - the resulting transformed knowledge is then used to exploit opportunities.
 - interorganizational processes,

- interorganizational information systems;
- Communication factors:
 - communication competence,
 - source credibility,
 - motivational factors,
 - economic rewards for sharing knowledge,
 - socio-psychological factors,

Biotechnology firms, especially at the startup stage, have different deficiencies. They often develop from scientific research carried out at universities or other institutions. They usually lack business knowledge, a business development plan, and necessary financing. Developing, testing and commercializing a technique involve a significant period of product development lead time and sunk costs. Funding is essential for such entrepreneurial firms. The competition for funds in this industry is particularly fierce. The majority of venture capitalists exclude certain biotechnologies because of regulatory uncertainty, the long development process and difficulty in understanding the technology (Baeyens and Vanacker, 2006).

Strategic alliances between large and small biotechnology firms are common. multinational corporations forming alliances or licensing agreements with small and medium sized biotechnology firms. This ensures that the large corporations have access to innovative ideas and that small start-ups are provided with access to global markets and necessary expertise, allowing to take advantage of R&D cost savings, economies of scale and scope, reduced regulatory costs and intellectual property rights.

Interorganizational collaboration enables firms to share knowledge and resources and create added value. Alliance networks between universities, research centers and businesses around the world are very important and stimulate innovation, promote the exchange of ideas and transfer of technologies.

The dynamic nature and high technological focus of the biotechnology industry makes an involvement in alliance networks a key factor of success. Collaborations in these networks add value to participating firms by forming relationships and building the relational and social capital of the firms.

At the centre of a biotechnology firm are its intellectual capital and the knowledge it produces. To exploit the intellectual capital and knowledge it is necessary to be involved in various types of networks to diffuse and assimilate knowledge. Working in networks involves social interactions and the ability to collectively resolve problems and achieve mutually beneficial outcomes.

Conclusion

Knowledge is one of the key resources in business development. Framework for the analysis of the knowledge management system may be built around the concepts of: properties of units, properties of relationships between units, and properties of knowledge. Effective knowledge management results from providing individuals with the opportunity to create, retain, and transfer knowledge.

Intellectual capital and the knowledge are at the center of biotechnology firms. To exploit these resources it is necessary to be involved in various types of networks to diffuse and assimilate knowledge.

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ZARZĄDZANIE WIEDZĄ W ALIANSACH STRATEGICZNYCH

Streszczenie

Wiedza jest kluczowym zasobem niezbędnym dla rozwoju przedsiębiorstwa. Ramy teoretyczne dla analizy systemu zarządzania wiedzą w organizacji mogą być zbudowane wokół takich pojęć, jak: cechy jednostek, cechy relacji pomiędzy jednostkami oraz właściwości samej wiedzy. Skuteczne zarządzanie wiedzą jest konsekwencją stworzenia jednostkom warunków do tworzenia, zatrzymywania i transferu wiedzy. Kapitał intelektualny i wiedza mają szczególne znaczenie w przypadku firm biotechnologicznych. Wykorzystanie tych zasobów jest uwarunkowane możliwością funkcjonowania w sieciach międzyorganizacyjnych.

Słowa kluczowe: wiedza, zarządzanie, zdolność absorpcji, alianse strategiczne.

Tłumaczenie Włodzimierz Rudny